CLAIMS

What is claimed is:

1. A system that facilitates cooling of a totally enclosed motor, comprising:

an electrical core that provides energy to the motor, the electrical core generating heat during normal operation of the motor;

a motor shaft coupled to the electrical core;

a frame that surrounds and supports the electrical core;

a first bearing assembly located at a drive end of the motor to support the motor shaft, the first bearing assembly mounted between an inner cap and an end bracket; and

a thermal barrier comprising a gasket, the thermal barrier disposed between the core and an inner side of the first bearing assembly to substantially insulate the first bearing assembly from the heat generated by the electrical core.

2. The system of claim 1, further comprising a second thermal barrier disposed between the core and an inner side of a second bearing assembly that is located opposite to the drive end of the motor, the second thermal barrier substantially insulates the second bearing assembly from the heat generated by the electrical core.

3. The system of claim 2, the second thermal barrier comprises a gasket, which gaskets of the first and second thermal barriers are annular.

4. The system of claim 1, the thermal barrier mounted to an inside surface of the inner cap and the end bracket.

5. The system of claim 1, further comprising an air deflector disposed on an outer side of the first bearing assembly to capture a portion of cooling air forced over an outside surface of the motor from an airflow source, and direct the cooling air over the outer side of the first bearing assembly.

6. The system of claim 5, the airflow source is at least one of an external fan and an external blower.

7. The system of claim 1, the thermal barrier comprises an inner cap thermal barrier and an end bracket thermal barrier either or both of which are formed of one of a metal and a fiberglass.

8. The system of claim 7, the gasket couples the inner cap thermal barrier to the end bracket thermal barrier.

9. The system of claim 7, the gasket accounts for a variation in tolerance between the inner cap thermal barrier and the end bracket thermal barrier.

10. The system of claim 7, the gasket forms an airtight seal between the inner cap thermal barrier and the end bracket thermal barrier.

11. The system of claim 1, the thermal barrier comprises an annular inner cap thermal barrier and an annular end bracket thermal barrier, the annular inner cap thermal barrier is mounted to and substantially surrounds a portion of the first inner cap that is exposed to the internal air of the motor, and the annular end bracket thermal barrier is mounted to and substantially surrounds a portion of the first end bracket that is exposed to the internal air of the motor, so that the first bearing assembly is insulated from the heat generated by the electrical core.

12. A method for cooling a totally enclosed motor, the totally enclosed motor includes an electrical core, the core coupled to a motor shaft, and a frame that encloses the electrical core, the core generates heat during normal operation of the motor, the method comprising:

providing a first bearing assembly located at a drive end of the motor to support the motor shaft, the first bearing assembly mounted between an inner cap and an end bracket;

insulating the first bearing assembly from the heat generated by the core using a thermal barrier;

forcing cooling air along the outside surface of the motor frame; and

redirecting the cooling air over an outer side of the first bearing assembly.

13. The method of claim 12, further comprising disposing the thermal barrier between the electrical core and an inner side of the first bearing assembly.

14. The method of claim 12, further comprising mounting the thermal barrier on the end bracket and the inner cap, the thermal barrier substantially surrounding the end bracket and the inner cap.

15. The method of claim 12, further comprising,

providing a second bearing assembly opposite the drive end, the second bearing assembly mounted between a second inner cap and a second end bracket;

coupling an outer side of the second bearing assembly to the second end bracket and an inner side of the second bearing assembly to the second inner cap; and

mounting a second thermal barrier having an annular gasket on the second end bracket and the second inner cap to substantially surround the second end bracket and the second inner cap to insulate the second bearing assembly from the heat.

16. The method of claim 12, further comprising mounting the thermal barrier on the end bracket and the inner cap, the thermal barrier comprises an inner cap thermal barrier and an end bracket thermal barrier that are joined using an annular gasket.

17. The method of claim 16, the inner cap thermal barrier mounts on the inner cap and the end bracket thermal barrier mounts on the end bracket.

18. The method of claim 12, further comprising coupling axially extending fins to the end bracket to facilitate cooling of the first bearing assembly.

19. The method of claim 18, the cooling air is redirected across the fins using an air deflector.

20. A system that facilitates cooling a totally enclosed motor, the totally enclosed motor includes an electrical core that is coupled to a motor shaft, and a frame that encloses the electrical core, the core generates heat during normal operation of the motor, the system comprising:

means for providing a first bearing assembly located at a drive end of the motor to support the motor shaft, the first bearing assembly mounted between an inner cap and an end bracket;

means for insulating the first bearing assembly from the heat generated by the core, the means for insulating includes thermal barrier means mounted to the inner cap and the end bracket;

means for forcing cooling air along the outside surface of the motor frame; and

means for redirecting the cooling air over an outer side of the first bearing assembly.